

COAL MINING

UNIVERSITY MICROFILMS
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ANN ARBOR, MICH

July, 1957

Volume 34, No. 7

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MICHIGAN TRACTOR SHOVELS



▲ This Michigan 175A on the Robert Bailey operation is the biggest, most powerful, fastest rubber-tired tractor shovel ever built.



▶ There's well over 3 cubic yards in this Michigan 175A bucket at Pilgrim Coal Co., Volant.



▶ Michigan 175A with scarifier is handy "all around" machine at Robert Bailey mine, Philipsburg.



▲ 2 Michigan 175As work as team to speed coal handling.



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Euclid's Model TC-12 Twin-Power Crawler establishes an entirely new standard of tractor performance. It's built to deliver unequalled drawbar horsepower, easy operation and a smooth, steady flow of power to meet any job requirement. It provides easy accessibility of all major components and all lubrication, check and adjustment points are located for maximum convenience. Unitized assemblies permit service or removal without a major tear-down of other parts.

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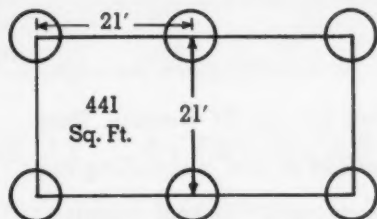


STRIPPER CUTS COSTS 25%

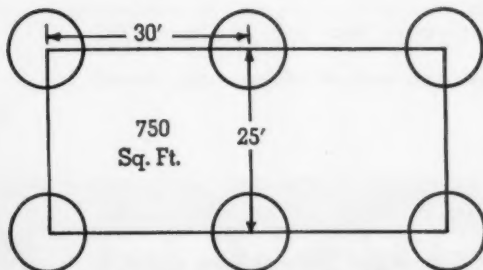
drilling larger blast holes with a
McCarthy Heavy-Duty Drill



This strip mine operator cut drilling and blasting costs 25% by using this 25' x 30' pattern of 8 in. blast holes—drilled by two McCarthy Heavy-Duty Vertical Auger Drills.



ORIGINAL PATTERN 6 in. holes



NEW PATTERN 8 in. holes

A Southern Ohio strip mine operator cut his drilling and blasting costs by 25% when he widened the blast hole pattern and switched from 6 in. diam. to 8 in. diam. holes. He used McCarthy Heavy-Duty Vertical Auger Drills and a new type of explosive to remove the sandstone overburden.

A cost study made by the operator shows that the McCarthy drill bored the 8 in. holes at less cost than the 6 in. holes. Four 6 in. diam. holes covered 441 sq. ft. Four 8 in. holes covered 750 sq. ft. Since fewer 8 in. holes were required to drill the same area, over-all drilling time was cut in half. In each pattern, the amount of hard rock drilling was the same. The study included five work shifts of two McCarthy Model 106-24 Auger Drills, one using 6 in. and the other using 8 in. flights. The stripper figured all drilling and blasting costs, including fuel, labor, bits, explosives, etc. Over-all cost saving was 25%.

McCarthy Heavy-Duty Vertical Auger Drills drill up to 24 in. diam. holes faster than any other auger drill. Start cutting your costs now by phoning the nearest Salem Tool representative. Or write for Bulletin M-100.



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TOOL CO.

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CAN BE
Yours



The four Barnosky Brothers — Joe, Paul, Louis and Albert — bought their Cat D9 in December of 1956, based on their satisfactory experience with Caterpillar D8 and D7 Tractors. They expected good service from the D9 but were pleasantly surprised to find it equalling the production of two Cat D8's, the long-recognized standard of comparison in coal stripping.

Increased production and economy of operation can be yours, too, with the new 320 flywheel H P D9, producing 98,000 lbs. of drawbar pull and with a 'dozer capacity of 12 cubic yards.

The big power, weight and traction of the D9 will prove its value on your operation. Don't take our word for it, ask the man who owns one! Or — better yet — call us about a demonstration right on your own strip job.

WITH A CAT[®] D9 FROM BECKWITH

Cat D9 tractor, equipped with No. 9S Bulldozer, is used to doze spoil material cast up by stripping shovel, in addition to stripping overburden at B & B mine located at Hackers Creek, West Virginia.



"OUR CATERPILLAR D9 IS DOING THE JOB OF 2 D8's"

"Our Caterpillar D9 is doing the job of two D8's. It is surpassing the expectations we had for it when we signed the purchase order. We are sold on "Cat" products. We get very good service from our dealer and find that standardizing on Cat gives us economy of operation and increased production through lack of down time."

These are the statements of Mr. Joseph Barnosky, shown at left, partner in B & B Coal Company of Mount Clare, West Virginia. Mr. Paul Barnosky, another partner, is shown at right.

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This $\frac{3}{4}$ -yd. Bucyrus-Erie 22-B shovel is loading out coal in an open-pit mine near Clarion, Pa.

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Bucyrus-Erie controls the quality of every component. Each lot of steel undergoes standard metallurgical tests to ascertain if our rigid specifications have been met and where conditions warrant it photomicrographs are made to permit a study of the grain structure. Bucyrus-Erie is one of the few companies that pours its own castings, in foundry facilities unsurpassed in the industry.

And just as important — each model is engineered completely new from the ground up. Existing machines are not "modified" simply to create a "new" model.

This attention to quality in design and manufacture results in machines requiring minimum upkeep and adds years of service life. Your Bucyrus-Erie distributor has complete details on machines from $\frac{3}{8}$ - to 4-cu. yd. For information on larger capacity loading and stripping shovels, write direct.

244E56C



Bonus Quality

Bucyrus-Erie leaves nothing to chance. This sample furnace charge, like all others, will be thoroughly tested to insure that its properties meet the highest specifications. It's just added insurance to guarantee top excavator performance.

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ERIE**

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65 belt hp!
up to 15,500 lb drawbar pull!
forward speeds from 1.5 to 5.5 mph!
reverse to 4.1 mph!

ALLIS-CHALMERS

HD-6

Tractor-Dozer

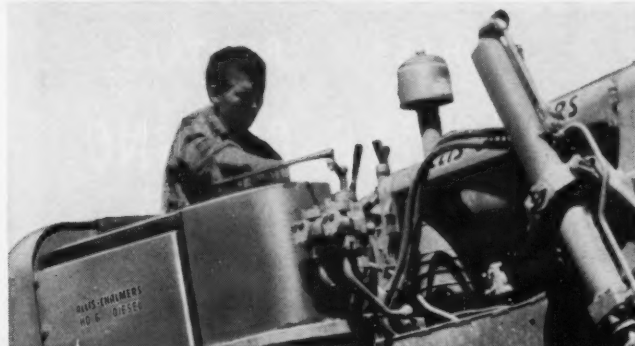


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BIG-DOZER DESIGN—NEW HANDLING EASE!**



Only dozer of its size with these basic advantages . . . engine-mounted rams, long push beams, fewer linkage points (only 2 instead of 5 or 6). These big-dozer features all combine to provide more accurate, gouge-free dozing . . . longer equipment life.

Convenient rotary-valve blade control makes the HD-6 the easiest handling dozer of its size. With more than 5½ feet of track on the ground, it has outstanding flotation . . . yet turns easily in any terrain. The HD-6 also combines large, low-set front idlers with a blade snugged close to the radiator guard . . . to provide balance that means better dozing, more work done under any conditions!



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prove it—on **your** job!

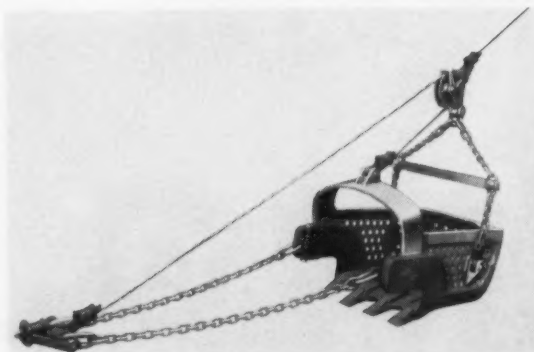
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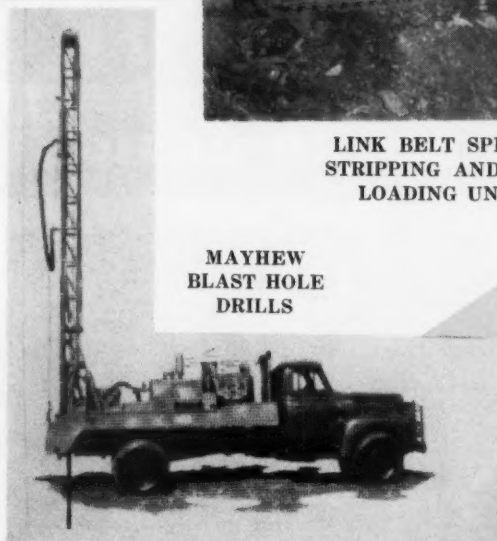


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TRACTOR SHOVELS**



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—he'll demonstrate one on your job NOW!**

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Please have the Allis-Chalmers construction machinery dealer
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Do You Know?

Picturing the nation's bright young science students as "sissies and bookworms," seriously hampers the attempts to get more young people interested in a science career, Dr. Howard L. Bevis, chairman of the President's National Committee for the Development of Scientists and Engineers, charged.

Calling on the country's publishing and entertainment industries to help establish the "respectability of brainpower," Dr. Bevis said he found the perpetuation of the idea that scientists were "long-hairs," alarming.

"Too much of what our children read or see as entertainment, presents the stereotype that brains are somehow not quite respectable, that education is stuffy."

"We need to convince our children that the smart youngster is not necessarily a 'long-hair.' As a matter of fact, Army tests have demonstrated that the good athlete usually has a high I.Q. Let's go away with the old bromide that talented young people are sissies and bookworms. It simply isn't true," Dr. Bevis said.

Pointing out that Russia knows what it is doing by holding her "brainworkers" in high esteem, Dr. Bevis stated that the nation's future depends on its young talent.

He said that "motion pictures, television, radio, comic books and popular fiction can play a vital part in creating an acceptance of the respectability of brainpower."

Mud pies made from liquid solutions of insecticides and hats made from empty bags containing residues of insecticides were named as two typical killers of children at the American Chemical Society meeting.

Careless use of pesticides causes the death of 100 to 150 persons each year, Dr. Bernard E. Conley, secretary of the American Medical Association's Committee on Pesticides, reported.

"Most of these accidents," Dr. Conley warned, "could be prevented if those sirens of disaster, ignorance and carelessness, could be thwarted. For example, deaths regularly occur because insecticides are temporarily stored in bottles that once contained wine, whiskey or soft drinks."

The poisoning of children through the careless handling of pesticides was stressed by Dr. Conley. In addition to the mud pie and hat killers, he said that typical pesticide poisonings of children include ingestion of phosphorus—containing gopher paste; ingestion of insecticide vaporizer tablets by toddlers; drinking of rodenticide solutions by infants; use of horticultural insecticide bomb to spray a room of sleeping children; the splashing of a garden spray containing an organic phosphorus insecticide on a playmate; and group poisoning following the eating of garden greens heavily contaminated with insecticide.

Cautioning the meeting that pesticide poisoning is a complex problem with no simple or pat solution, Dr. Conley urged a wider publicity program to alert the public to safety awareness in the use and handling of the insect-killers.

HERE AND THERE IN THE COAL INDUSTRY

The coal industry lost one of its outstanding personalities on June 30 when L. Russell Kelce, president of Peabody Coal Co., and a director of National Coal Association for many years, died at St. Louis June 30.

* * * *

S. Austin Caperton, president, and all other officers and directors of Slab Fork Coal Co. were reelected at the Company's 50th anniversary meeting at Slab Fork, W. Va., June 15. A feature of the anniversary celebration was the presentation of awards to 46 employees for 25 years of service and to 19 other men no longer on the active list. Other officers reelected were Thomas B. Jackson, vice president; H. D. Butterworth, secretary-treasurer; A. J. Walker, general manager; S. Austin Caperton, Jr., assistant to the president; L. L. Fleshman, general superintendent; B. F. Durvin, chief engineer; and George McKinney, superintendent of the Gaston Mine at Alpoca.

* * * *

Island Creek Elects J. K. Banville treasurer. Election of John K. Banville as treasurer of Island Creek Coal Co., has been announced by President R. E. Salvati. Mr. Banville was formerly manager of the treasury department of U. S. Steel Corp. at Pittsburgh. In his new position he will be located at the Island Creek headquarters in Huntington, W. Va.

* * * *

Virginia Coal Operators Association, at its 38th annual membership meeting at Norton, Va., on June 28, elected the following directors: R. H. Hughes, president of Clinchfield Coal Co., Dante, Va.; H. W. Meador, vice president, Stonega Coke & Coal Co., Big Stone Gap, Va.; J. B. Taggart, president, Wise Coal & Coke Co.,

Dorchester, Va.; and John Mayhew, vice president, Blue Diamond Coal Co., Knoxville, Tenn. The directors elected Mr. Meador to serve as president of the Association and Mr. Hughes as vice president. E. H. Robinson was reelected secretary-treasurer.

* * * *

Western Pennsylvania Coal Operators Association has reelected G. A. Shoemaker, executive vice president of Pittsburgh Consolidation Coal Co., as President for his seventh consecutive term. Harry A. Sutter and Charles B. Baton were elected Vice Presidents. Directors reelected in addition to Messrs. Shoemaker, Sutter, and Baton, include J. Allan Brooks, Elkin, J. C. Jamison, Jr., R. H. S. M. Cassidy, J. M. Connor, J. E. Jamison, Jr., C. C. McGregor, Henry C. Rose, Walter F. Schulten, W. G. Stevenson, F. G. West, and James R. Wilson.

* * * *

The Big Sandy-Elkhorn Coal Operators Association at its annual meeting in Lexington, Ky., on June 13, reelected its officers as follows: President, W. W. Goldsmith; Vice President, William Crawford; Treasurer, L. B. Brashear, and Executive Secretary, C. W. Davis. Directors were elected as follows: G. H. Baber, H. H. Barber, L. B. Brashear, J. C. Coolsey, William Crawford, Courtland T. Dahlin, George E. Evans, Jr., J. J. Foster, W. W. Goldsmith, Noah D. Howard, Harry LaViers, Virgil D. Picklesimer, C. D. Reed, B. F. Reed, and David A. Zegeer.

* * * *

Wendell B. Pratt, President of TWIN STAR INDUSTRIES, INC., has announced the sale of the Dakota Collieries Lignite Division to the North American Coal Company of Cleveland, Ohio.

COAL MINING

Vol. XXXIV

JULY, 1957

No. 7

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Here's why SCHROEDER LINE FILTERS are preferred:

- Filter element costs little and is replaceable.
- Flip-top cap permits minute change of element.
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- Many types and makes of filter elements available.
- Minimum cost for maximum filtration area.
- Element protected by built-in by-pass relief.
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Successful, busy executives in the coal industry follow this formula to keep their work up-to-date with less work.

HOW TO ACCOMPLISH MORE

with less work

By JACK E. BEDFORD

*Professor of Management
Armstrong College*

Top management and middle-management men in the coal industry who keep up-to-date on their work follow a simple formula. This idea keeps their schedule current and is flexible enough to make it easy to handle unexpected situations that develop without disrupting the complete routine.

Successful coal company executives have followed this plan for a long time. It is not new — it is time tested as a technique of modern management. The formula has these three parts:

1. Refer
2. Defer
3. Delete

REFER

When an executive refers a duty to someone else in the organization, it can be a time-saver for everyone. This can be done to avoid a time-wasting task, to bring special skills and abilities into the picture, or to train another man to take on new responsibilities.

For instance, a top executive in a coal mining company is called on to give a speech. It is an honor and good public relations for the firm. It cannot be deferred to deleted — it must be done.

Some executives will spend a

day, two days or a week writing the speech. It will be good. But, in twenty minutes or a half-hour it is over. The time and the dollar cost of this executive task may be tremendous. And, during this speech writing time many more important tasks and decisions may be deferred.



However, a coal mining executive who follows the management formula will refer this to someone else. It may be the public relations department, the advertising department, or to a ghost writer who works on a fee basis. By referring the job to someone else, the executive has a day, two days or a week that can be devoted to top level management decisions that will build profits for the company.

Another time when it is best to refer the task to someone else is for executive development. For instance, a production schedule or sales budget is needed. In deciding whether to do it himself or refer it to another man, the time element will enter the picture. The top executive knows he can do the job quickly and efficiently. He is

better qualified than anyone else in the firm to handle the task.

When the executive refers the work to someone else, however, he is providing executive development. The person assigned the job grows in management stature. He learns how to prepare the budget or schedule. He gains self confidence — and his loyalty increases many times.

A maxim of successful management is: When two partners always agree — one is unnecessary. This is another time when referral may be the best management strategy. Some executives follow the practice of always referring important decisions to someone else.

This provides another viewpoint and helps make the final decision better. And, with the referral of the decision to someone else, the top executive can study the problem more objectively and perhaps provide the necessary checks and balance needed for wise management.

DEFER

Successful coal mining executives do not "put off" till tomorrow schedule there are items that do tasks that need to be done today. Yet, on every executives daily not have a deadline. These are the items that can be deferred, to provide more time for the "must" items and special situations that do develop during the day.

For instance, many tasks facing an executive are in the "when I have time" category. A sales budget, due the first of December, for instance, might be on an executive's schedule in October. He thinks about it, but because there isn't much urgency, puts off actually doing it.

This is not what is meant by defer. Each day a task is deferred this way it takes time. It uses up a certain amount of concentrating time of the executive each day it is deferred. A better way of handling this is to defer it to some specific date in advance of the first of December deadline.

Another time when the defer phase of this management formula can be used is when there is not enough time to complete the job. For instance, some management tasks take considerable time. There is not enough time to complete this job and still handle other more urgent work. It is best to defer this to a later date when there will be plenty of uninterrupted time to complete the job.

Don't "put it off" . . . transfer it to some better time.

DELETE

Every executive has some things on his daily schedule that are not necessary. Some are tasks that have changed in importance since entered on the program. Others, are things that have been done or handled by others in the firm.

Naturally, this does not mean to go over the daily schedule and delete all things that can't be referred or deferred. It might be the easy way to clear the desk, but it is not typical of a top level executive.

Minor and unimportant things on a daily schedule got there for some reason. A quick review of the reasons and recent developments will indicate which items should be deleted.

For instance, a management consultant discovered that one executive was always loaded down

with work. His secretary wrote more letters than any other in the office. Yet, this executive always had some odds and ends unfinished at the end of the day.

Analysis revealed that this executive personally answered all letters addressed to him. Even direct mail advertising with his name filled in on a form letter got an answer. When "file thirteen" was used to delete these irrelevant and unimportant letters his executive efficiency increased.

DO

Fifteen minutes spent in an analysis of the daily work schedule and the application of the REFER — DEFER — DELETE formula will be a quarter-hour well invested. Now, the coal mining executive's calendar will be reduced to a reasonable day's work . . . a plan that can be done in a minimum of time and with professional executive skill.

- Three new portable Diesel Electric Sets have been announced by Caterpillar Tractor Co. The new units are the Caterpillar D311, D315 (Series G), and D318 (Series G) Diesel Electric Sets, each equipped with the new, compact Caterpillar Generator.

The D311 Electric Set develops 30 KW of 60-cycle, 3-phase current, while the D315 (Series G) Electric Set is rated at 40 KW, and the D318 (Series G) Electric Set at 60 KW.

These highly mobile units are available either skid-mounted or with running gear, and the output of their self-regulated, constant-voltage generators furnishes a choice of 120, 240, 120/208 or 480 volt current at 1800 RPM. Standard equipment on the sets includes 24-volt, 18-ampere charging generators and 24-volt, 170 ampere-hour battery sets. The power units also come equipped with 24-volt direct electric starting, wrap-around bases, control panels and

water temperature-oil pressure safety shut-offs. The two smaller sets have 50-gallon fuel tanks, and the D318 (Series G) has a 57-gallon fuel tank.

Control panels for the new electric sets have an AC ammeter with phase selector switch, AC voltmeter, battery charging ammeter, circuit breaker, and three current transformers.

In addition, the electric set packages include radiators, blower fans, lubricating oil coolers and vernier-type governor controls.

Designed into all three units are features intended specifically for the safety of operating personnel. The control panels are enclosed, and flexible conduit protects all wiring so that no high voltage is exposed. The control doors can be locked to prevent tampering, and switchgear is enclosed under weatherproof covering, by doors that may be closed in bad weather. There is a safe terminal board for load leads, and a grounding lug for completely safe operation.

Several attachments have been made available to increase the versatility of the new Portable Electric Sets. These include 110-volt, 15-ampere outlet receptacles, running gear equipped with mechanical parking brakes, and, for easy starting in temperatures down to 0° F, glow plugs or ether starting aids.

For convenience of operation, controls and gauges, including the governor controls engine instruments, electrical meters and circuit breakers, are located on the control panel. When on running gear, all three units have low centers of gravity, and roll on 7:00x14.5-8 ply tubeless tires. The highly mobile units can be started and controlled from their instrument panels.

All three units are easy to service and the terminal boards are readily accessible. Battery servicing is made simple through utilization of an access door located below the control panel.

SEALS ...

And Their Installation

Seals play an important role in protecting the vital parts of earthmoving machinery. By following correct installation procedure it is possible to prevent costly damage and downtime.

J. B. SINCLAIR

*Service Department
Caterpillar Tractor Co.*

Very frequently, the parts doing a big job are small in size and therefore, are seemingly insignificant. When compared to the size and cost of a crankshaft, the size and cost of the seal at the forward end of the crankshaft is negligible. Yet, that small seal, if not installed correctly or replaced shortly after a leak occurs, can permit serious damage to the engine.

A felt seal is ordinarily used where the principal requirement of the seal is preventing the entry of dust and the retention of oil or grease is not a requirement. When installing a felt seal, impregnate the seal with lubricating oil to protect the seal from overheating and wear. If the installation requires that the seal be split, the cut should be made at an angle.

Cork seals are sometimes used instead of felt seals. While cork seals give good protection at temperatures up to 150° F, they are not recommended in applications where they will be exposed to acids, alkalis or high pressure.

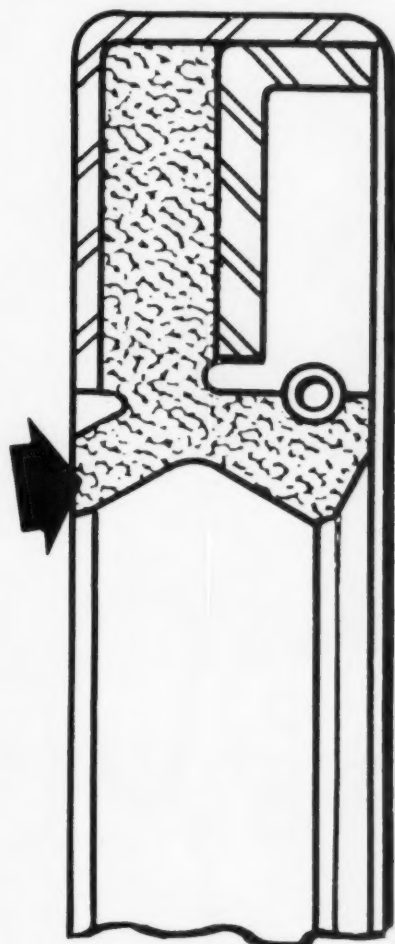
Cork, when used against a solid backing such as on face type seals, effectively retains grease in a compartment and excludes water and dirt. When installing a face type seal with a cork face, coat the cork face with graphite grease.

Leather and rubber are widely used sealing materials. The most common usage is in lip type seals. However, leather is being replaced by synthetic rubber in many of its applications. The rubber lip seal, in most applications provides better sealing at high speeds, high temperature and where misalignment and run-out conditions exist. Rubber lip type seals are also effective dirt seals.

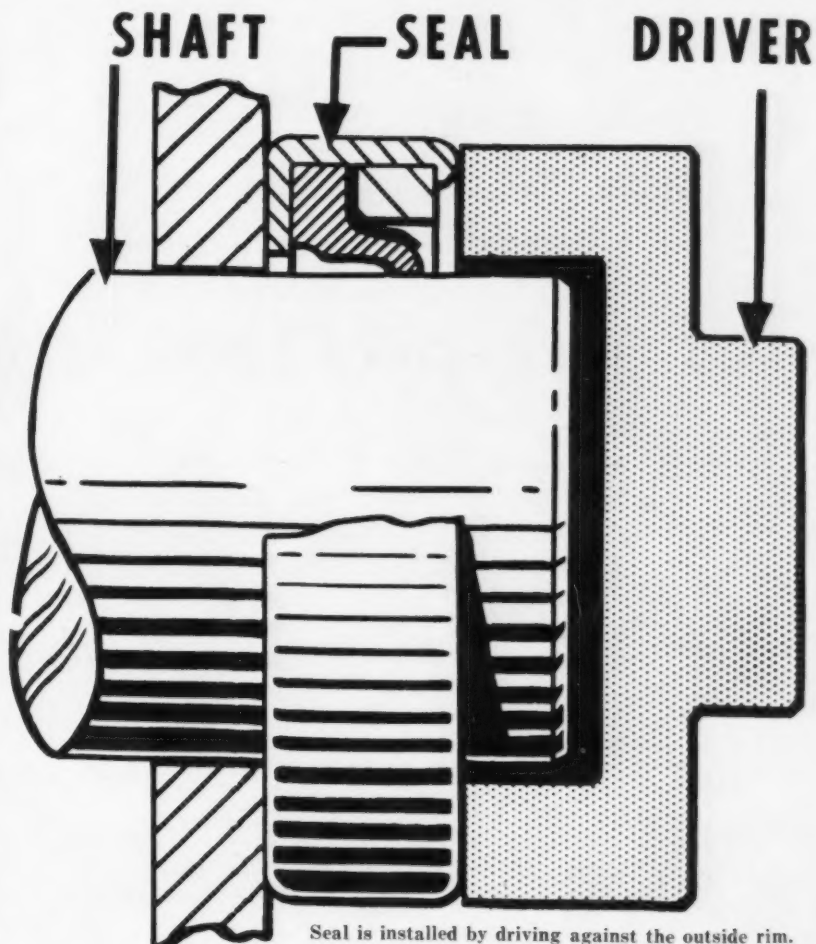
There are definite reasons why rubber seals have not replaced leather seals in all applications. Therefore, it is suggested that unless a rubber seal is recommended, the original leather lip seal should be used.

When possible, prior to installing a leather lip seal, soak the seal in warm oil for about a half hour. A rubber lip seal should just be dipped in oil. Install the seal with the wiping edge turned in the direction recommended. For single lip seals, leather or rubber, it is a general rule that the lip of the seal points toward the material to be sealed. That is, if the primary function of the seal is to exclude dirt from a compartment, the lip of the seal should be pointed toward the outside. If the primary function is to seal lubricant in a compartment, the lip of the seal should point toward the compartment containing lubricant.

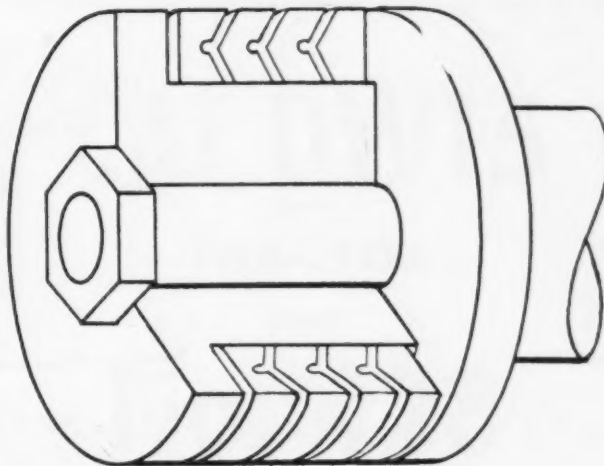
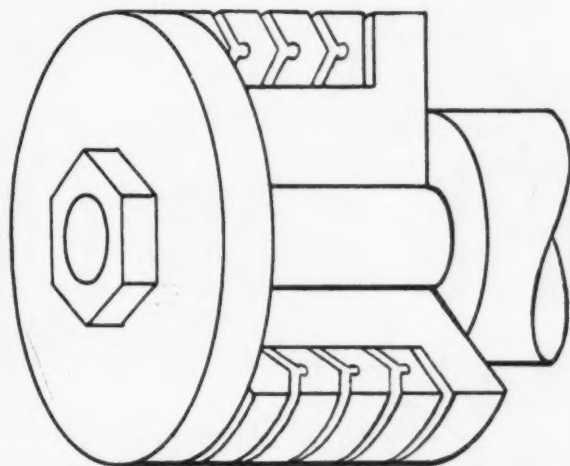
(Text Continued on 19)



Lip Seal indicated by arrow.



Seal is installed by driving against the outside rim.




Arrow point to chevron seals. This type seal is commonly used in hydraulic pistons.

SEALS . . .

And Their Installation

Seals play an important role in protecting the vital parts of earthmoving machinery. By following correct installation procedure it is possible to prevent costly damage and downtime.

 **J. B. SINCLAIR**
Service Department
Caterpillar Tractor Co.

Very frequently, the parts doing a big job are small in size and therefore, are seemingly insignificant. When compared to the size and cost of a crankshaft, the size and cost of the seal at the forward end of the crankshaft is negligible. Yet, that small seal, if not installed correctly or replaced shortly after a leak occurs, can permit serious damage to the engine.

A felt seal is ordinarily used where the principal requirement of the seal is preventing the entry of dust and the retention of oil or grease is not a requirement. When installing a felt seal, impregnate the seal with lubricating oil to protect the seal from overheating and wear. If the installation requires that the seal be split, the cut should be made at an angle.

Cork seals are sometimes used instead of felt seals. While cork seals give good protection at temperatures up to 150° F, they are

not recommended in applications where they will be exposed to acids, alkalis or high pressure.

Cork, when used against a solid backing such as on face type seals, effectively retains grease in a compartment and excludes water and dirt. When installing a face type seal with a cork face, coat the cork face with graphite grease.

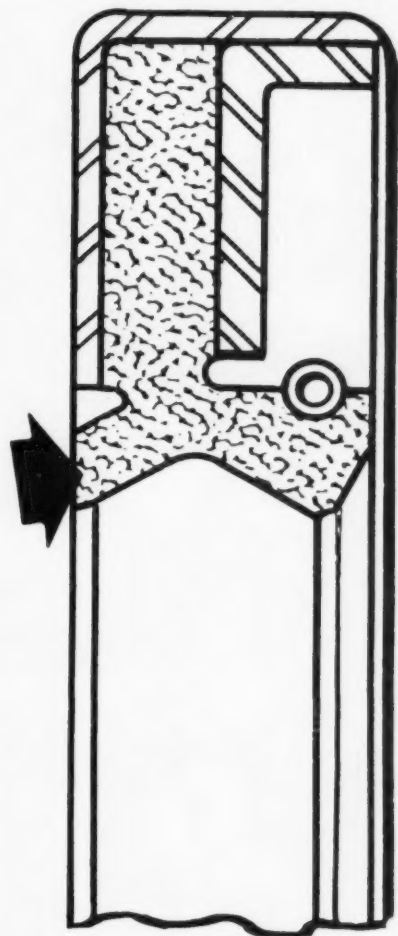
Leather and rubber are widely used sealing materials. The most common usage is in lip type seals. However, leather is being replaced by synthetic rubber in many of its applications. The rubber lip seal, in most applications provides better sealing at high speeds, high temperature and where misalignment and run-out conditions exist. Rubber lip type seals are also effective dirt seals.

There are definite reasons why rubber seals have not replaced

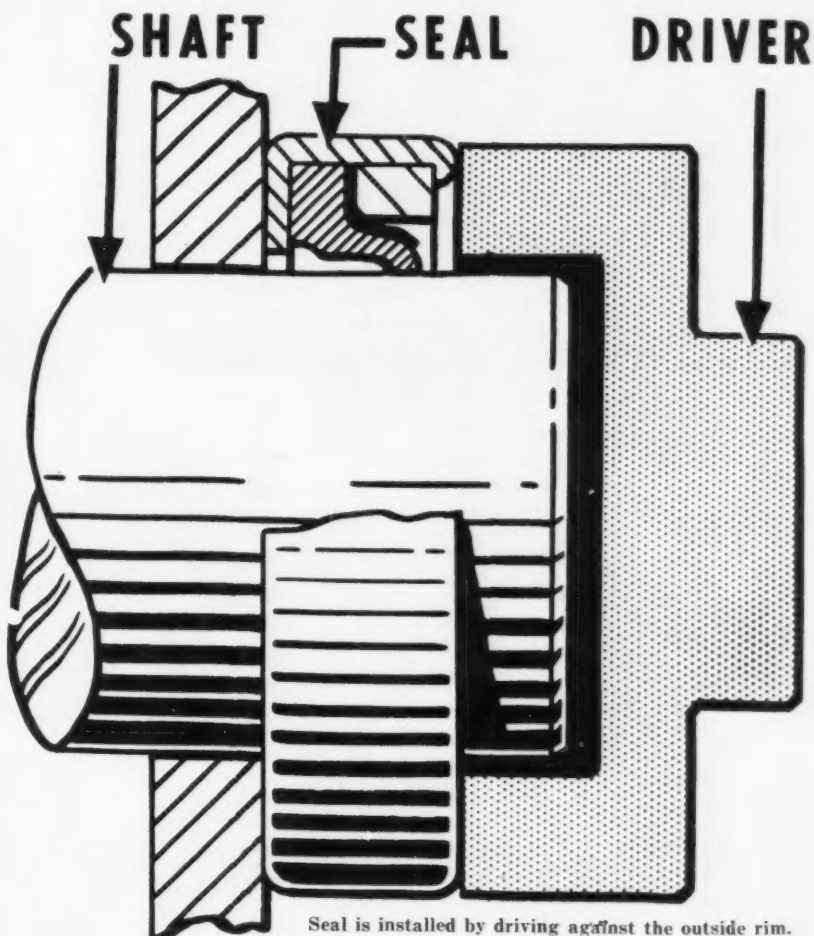
leather seals in all applications. Therefore, it is suggested that unless a rubber seal is recommended, the original leather lip seal should be used.

When possible, prior to installing a leather lip seal, soak the seal in warm oil for about a half hour. A rubber lip seal should just be dipped in oil. Install the seal with the wiping edge turned in the direction recommended. For single lip seals, leather or rubber, it is a general rule that the lip of the seal points toward the material to be sealed. That is, if the primary function of the seal is to exclude dirt from a compartment, the lip of the seal should be pointed toward the outside. If the primary function is to seal lubricant in a compartment, the lip of the seal should point toward the compartment containing lubricant.

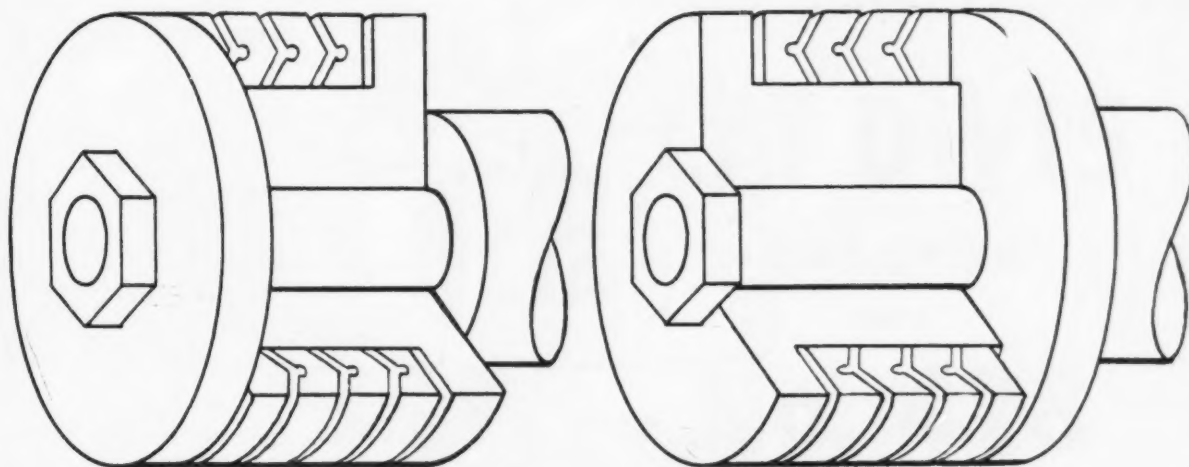
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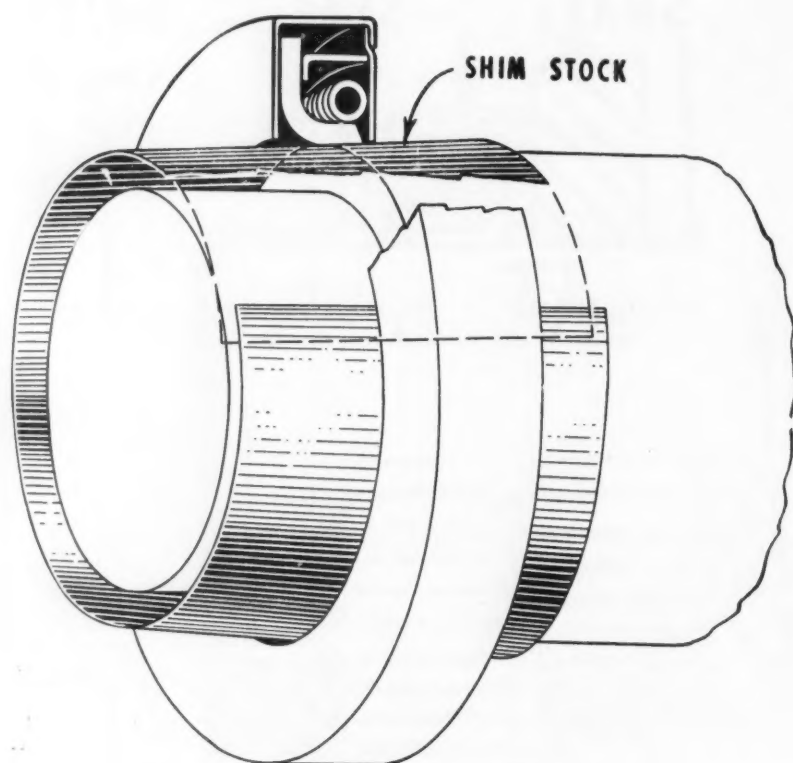
Lip Seal indicated by arrow.



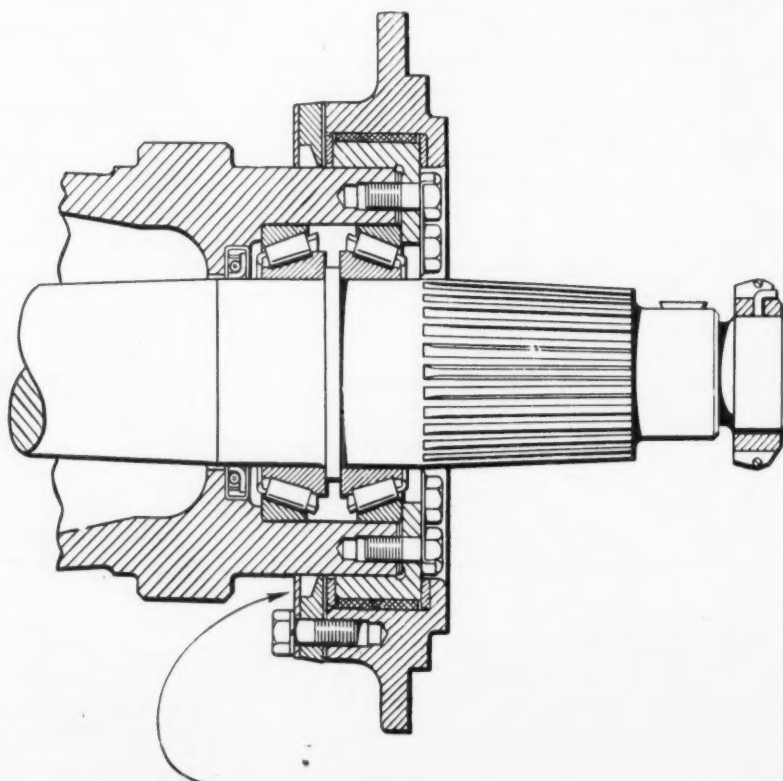
Seal is installed by driving against the outside rim.



Arrow point to chevron seals. This type seal is commonly used in hydraulic pistons.



Shim stock protects the lip of the seal during assembly.



Arrow points out location of felt seal.

NEW

**Money-Making
Team...**



NEW

CAT DW15

(SERIES E)

TRACTOR

and

No. 428

LOWBOWL SCRAPER

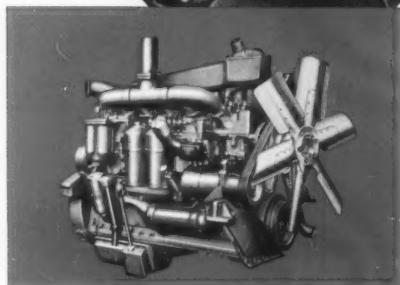
*Built and warranted
by Caterpillar*

Sold, Serviced and Backed by your **CATERPILLAR DEALER**

CAT DW15

(SERIES E)

TRACTOR



200 HP Cat Engine designed specifically for DW15. Has amazingly high torque—23% torque rise for fast acceleration, less shifting.

**MORE POWER,
RIMPULL, CAPACITY
AND SPEED THAN EVER BEFORE!**

Now here it is: the new Cat DW15 (Series E) Tractor—bigger, heavier, faster, more powerful than ever! Its new high torque engine provides plenty of power for fast loading and quick acceleration, and gives the DW15 a wide speed range in each gear to reduce shifting. The DW15 has speeds up to 37.2 MPH. Its four-wheel design assures stability—even on high-speed turns—with no loss of maneuverability when working in close quarters. Wide-section, tubeless tires on drive wheels increase traction, cut tire downtime 80%! The DW15 is versatile. It can be teamed with a wide variety of equipment to match your needs. This includes the No. 428 Scraper and the Athey PR15 Trailer, drawbar-pulled rollers, compactors, water tanks and construction harrows.

TRAVEL SPEED AND POUNDS RIMPULL

GEAR	RATED TORQUE		MAX. TORQUE	
	MPH	Pounds Rimpull	MPH	Pounds Rimpull
1st	2.7	21,300	1.3	27,500
1st Auxiliary	3.4	16,700	1.7	21,550
2nd	6.2	9,120	3.1	11,800
2nd Auxiliary	8.0	7,140	4.0	9,220
3rd	11.4	5,070	5.7	6,430
3rd Auxiliary	14.3	3,960	7.2	5,120
4th	18.1	3,140	9.0	4,060
4th Auxiliary	23.1	2,455	11.5	3,170
5th	29.1	1,950	14.5	2,520
5th Auxiliary	37.2	1,525	18.6	1,970

Torque characteristics of engine mean wide speed range in each gear—reduced shifting, faster cycle time.

Engine	Cat Engine, 4-cycle diesel, 200 HP (Maximum Output)
Speeds	10 forward from 2.7 to 37.2 MPH 2 reverse up to 5.1 MPH
Tires	Front—12.0-20 (14 ply rating) Drivers—(Tubeless) 26.5-25 (20 ply rating)

POWER MATCHED

EARTHMOVERS

CAT No. 428

LOWBOWL SCRAPER



FASTER LOADING, MORE CAPACITY AND INCREASED OUTPUT

10% to 15% faster loading—these are reports coming in from contractors using Caterpillar LOWBOWL Scrapers. The LOWBOWL principle is incorporated into the new No. 428—built specifically to match the speed and power of the new DW15. The No. 428's bowl is longer and wider—material is not lifted as high and incoming material meets less dirt-to-dirt resistance. Every component—such as the 9' 4" cutting edge, 18 cu. yd. (heaped) bowl, and dozer-type ejector—is engineered for fast loading, high-speed hauling and accurately-controlled dumping at lowest possible costs. See the No. 428 LOWBOWL Scraper at our headquarters. Let us analyze your earthmoving requirements and show you how Cat LOWBOWL Scrapers can make you more money.

Capacity 13.0 cu. yd. (Struck)—18.0 cu. yd. (Heaped)
Load Capacity 39,000 lb.
Tires (Tubeless) 26.5-25 (20 ply rating). Tubeless design eliminates 80% of downtime due to tire failure. Wide section gives more flotation and traction.

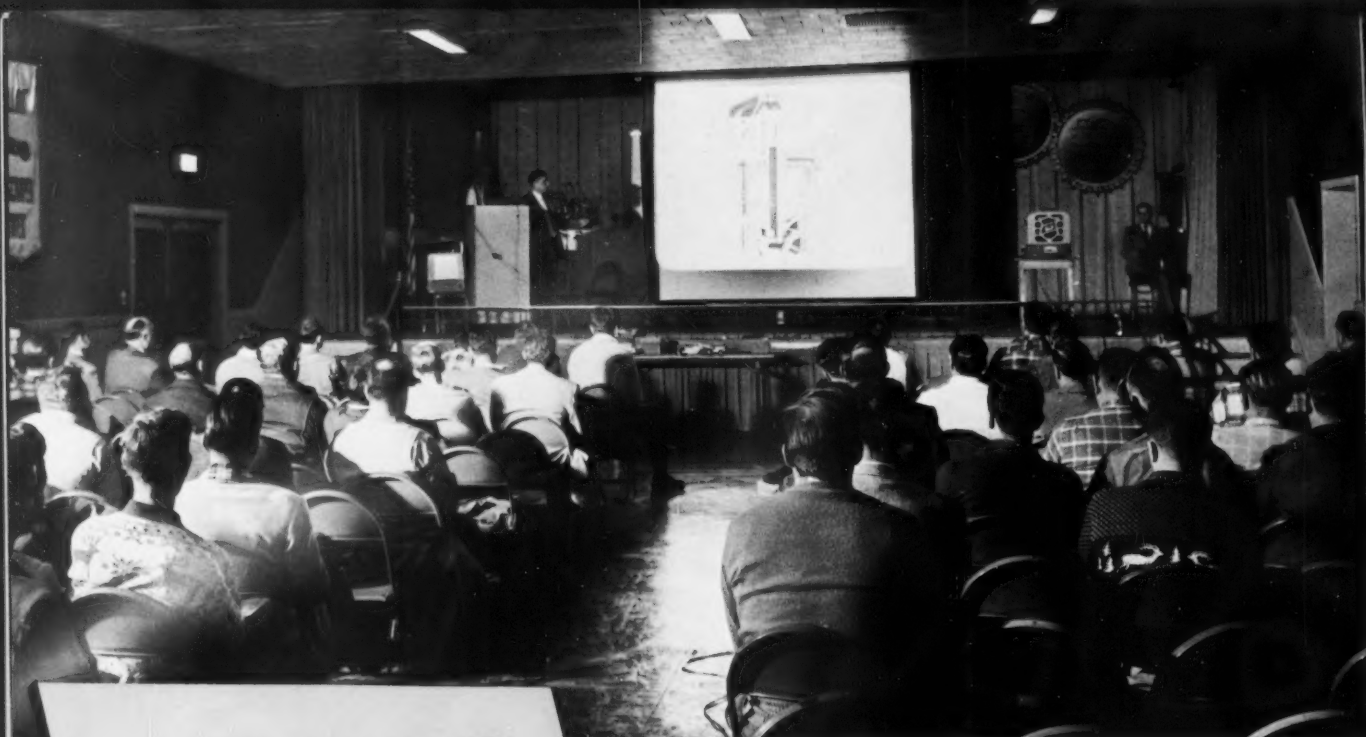


Here's LOWBOWL loadability in action: since the bowl is longer and wider, material fills bowl rapidly without the excess piling up that can slow down loading. You get out of the cut faster with an optimum size load. No. 428 also features increased ground clearance and higher apron lift for unrestricted ejection.



Equipment matched specifically to the DW15 includes 22-ton Athey PR15 Rear Dump Trailer.

FROM YOUR **CATERPILLAR DEALER**



**LOOK TO THE
DEALER BEHIND
THE PRODUCT**

Here's a typical scene showing how we can help train your men to get the maximum production from the new CAT* DW15 Tractor and No. 428 LOWBOWL Scraper—as well as from other CATERPILLAR* machines. Such training helps assure that your equipment will live up to expectations, will give maximum returns on your investment. We'll help your men with operating suggestions and preventive maintenance tips. Cat products have a reputation to live up to—and so do we. We're on your team to help you make money. Tell us how we can serve you best.

AT YOUR SERVICE — YOUR CATERPILLAR DEALER

*Caterpillar and Cat are Registered Trademarks of Caterpillar Tractor Co.

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CLEVELAND BROTHERS EQUIPMENT CO., INC.

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ROUTE 122-STATE ROAD, FRACKVILLE, PA. • P. O. BOX 431, PHILIPSBURG, PA.

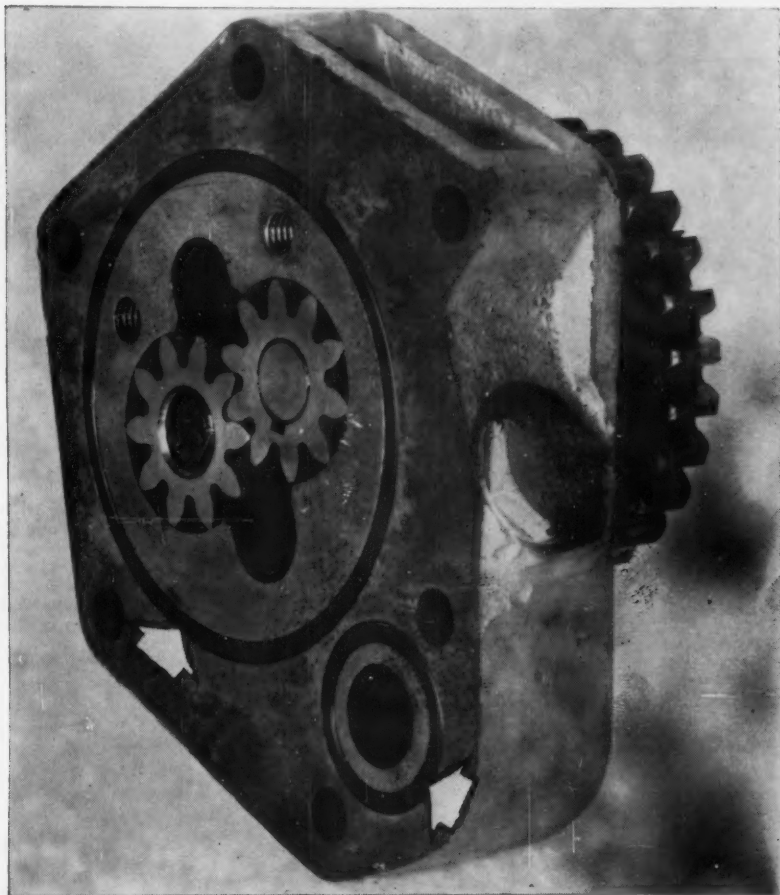
OHIO MACHINERY CO.

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U. S. ROUTE 250, CADIZ, OHIO • 4000 LAKE PARK ROAD, YOUNGSTOWN, OHIO

WALKER MACHINERY CO.

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CM-6



Arrows point to O-ring seals.

(Continued from 12)

A double lip seal, whether leather or rubber, frequently has one lip which is wider than the other lip. In applications requiring such a double lip seal, the spring side of the seal, which has the wider lip, should always point toward the lubricant to be sealed. If two compartments containing lubricant are separated by a double lip seal, the wider lip should point toward the compartment containing the higher pressure of the compartment with the most fluid lubricant.

There are several ways to install lip type seals. If the seal to be installed must pass over a sharp shoulder, keyway or spline, shim stock should be wrapped over these areas and the shim stock lubricated to provide a smooth, sliding sur-

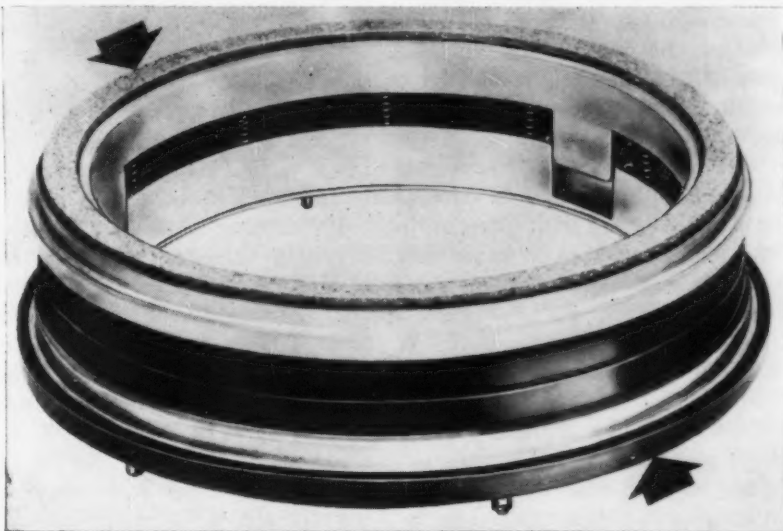
face for the seal lip. If shim stock is not available, a heavy paper coated with grease will work satisfactorily. To drive the seal in place, use a driving member that will press against the outside rim of the seal.

Another commonly used syn-

thetic rubber seal is the O-ring seal. This seal should be dipped in oil just prior to installing and should be rolled over the shaft on which it is to be installed, or placed into its groove with a minimum of stretching. Also, make sure the O-ring is not twisted when it is placed in its groove. O-ring seals are inexpensive and, once used, conform to the shape of the groove in which they are installed. They are, therefore, usually replaced at disassembly and seldom reused except in an emergency.

Chevron type packing seals are generally used in hydraulic cylinders. Direction of assembly is most important to effect a seal with this type of packing. In all applications, the chevron packing should be installed with the point of the chevron toward the flange of the piston. Installed in this manner, the lips of the packing will not catch on sharp edges. Always use sufficient shims behind the packing gland to give the chevron packing a slight press.

As previously pointed out, seals are normally small in size and cost very little; however, they play an important part in the life of earth-moving equipment. Leaking seals should always be replaced. Those found to be questionable at reconditioning should also be replaced to prevent future downtime and possible costly repairs.



Top arrow shows example of Neoprene seal. Bottom arrow shows example of cork seal.



This earth-shaking explosion resulted from the ignition of 800 pounds of bituminous-coal dust at the Federal Bureau of Mines' experimental coal mine at Bruceton, Pa. Such explosions, arranged for the Bureau's safety research, have been clocked at a speed faster than a rifle bullet.

Coal Mine EXPLOSIONS *found related to WEATHER*

The long-held belief by coal miners that disastrous mine explosions are often associated with stormy weather has some basis in fact.

Dr. C. B. McIntosh, geography professor at the Eastern Illinois State College, Charleston, has studied the relationship between weather and 428 major coal mine explosions in the period from 1839 to 1953.

Although several compounds found in coal mines can be burned, the two occurring with sufficiently high concentrations to cause disastrous explosions are methane and coal dust.

Dr. McIntosh finds that the methane content in air in the mines was increasing either on the day before or the day of the explosion. As a gas, he reports, methane expands and contracts with changes in atmospheric pressure and temp-

erature, but pressure is the important factor in mines.

The principal methane storage places in coal mines are worked-out rooms. The danger comes when these are closed off with only temporary barricades. Then a fall in atmospheric pressure disturbs the balance between ventilated passages and unventilated rooms, forcing the methane-contaminated air past the barriers. This can also happen, Dr. McIntosh says, even from rooms permanently sealed.

Concerning the part weather plays in affecting coal dust explosions, Dr. McIntosh found that the moisture accumulated by the coal particles is dried out by the passage of a cold front. Since the coal's surface moisture evaporates first, just as it does in soil, the dried-out top layers would be easily stirred up and dispersed into the air.

"Conditions favorable to coal mine explosions — increase in methane and drying of coal dust — are therefore closely associated with frontal passages and with the ensuing influence of cold, dry air," Dr. McIntosh reports.

The periods of highest methane content and dry coal dust do not coincide, so there should be two peaks of explosion frequency. He found evidence for the two peaks — explosions occurring near a frontal passage being due primarily to methane and those occurring about three days later being due mainly to coal dust.

Although his studies are not "proof," Dr. McIntosh suggests that an understanding of the weather-explosion relationships he found could help industry improve its safety record of the past eight years.

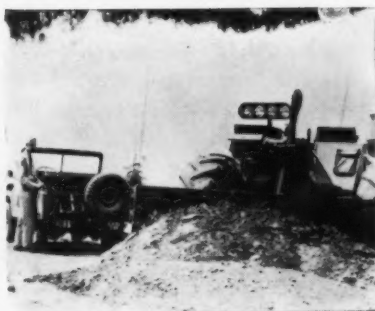


TRACTOR OPERATED BY REMOTE CONTROL BEING TESTED BY ARMY AT FORT BELVOIR

A "robot" tractor that can be operated anywhere within range of the radio by which it is controlled is undergoing tests at the U. S. Army Research and Development Laboratories, Fort Belvoir, Virginia, the Department of the Army announced today.

The tractor, believed to represent the first application of the remote control principle to a piece of construction equipment, may prove invaluable in construction work in radioactivated and combat zones. It may also be useful in various other tasks, such as fighting large fuel storage fires.

From a jeep or helicopter equipped with a standard military radio transmitter and a special control box, the operator can start and stop the machine, engage and disengage the gears, operate in



forward and reverse, manipulate the dozer blade up and down, and activate the steering mechanism.

Normal operations can be performed from distances of up to 15 miles, the practical range of the radio, simply by manipulating the buttons on the control box. Army Engineers believe that the installation of small television

cameras on the tractor will give the remote operator additional knowledge and observation of the machine, and give him the ability to work it without the need of information relayed by a visual observer.

The prototype is the standard commercial "tornadozer" manufactured by Le Tourneau-Westinghouse of Peoria, Illinois. The only visible change to the machine is the substitution of a standard military radio receiving set for the operator's seat. Manual controls have been retained for conventional operations.

As a safety precaution, early tests have been conducted with the tractor and control point within viewing distance. It will be operated from greater distances as the test schedule progresses.

He's Ready for Promotion When . . .

By ERNEST W. FAIR



One of the toughest assignments facing any coal firm executive is to decide which one of several employees is to be selected for a forthcoming promotion in the company organization. Aside from the desire to be as fair as possible he must also be certain that the best man from the standpoint of value to the firm in the new spot will be selected.

Here is a method being used by

a number of executives not only in the coal business but in other fields as well. They employ a promotion check chart such as that shown in the accompanying illustration. Each factor is balanced for the individual under consideration as to positive possession, uncertainty and negative or failure to possess the desired quality. Two points are scored for those in the first column and one for those in the second

(none for the negative choice). The various totals arrived at for each of the employees being checked serve to spotlight the individual possessing the best potential for the new staff position.

Points to be checked vary from one executive to another. We have selected herewith fifty of those which appeared most often in a wide number of such lists studied. The reader may use all or any number since different factors will apply to different staff positions under consideration.

1. Keeps quality of present work exceptionally high day in and day out.
2. Is continually improving his own knowledge of the coal business.
3. Knows what to do in average situations without being told.
4. Has always been willing to share in unpleasant work or unpleasant aspects of the job with other employees.

5. Is good at routine; has shown a knack for following established patterns.

6. Is not fixed in his ways of doing things and has shown willingness to alter previously established methods.

7. Has the ability to learn new methods and shown positive interest in doing so whenever possible.

8. Has demonstrated orderliness in his present work.

9. Possesses adequate knowledge of the details of his present job.

10. Has shown a definite interest in receiving a promotion and wanting to climb in the company organization.

11. Requires a minimum of instruction for any ordinary work assignment.

12. Can think things out — does not need minute detailed explanation of what to do on every assignment.

13. Has shown no inclination to "goof off" at the job now held.

14. Has a good record of past work performances not only with the firm but on previous jobs.

15. Takes good care of his personal health in private as well as on the job.

16. Has a record on the present job of a minimum or errors of judgement.

17. Can do every regular assignment without needing close supervision.

18. Does not give alibis or excuses for failure to do his work.

19. Has a general attitude of cheerfulness at his present job and around others.

20. Shows seriousness at his work; has demonstrated a minimum of "horse play".

21. Can do his present job without physical or mental strain.

22. Demonstrates patience with others in connection with his work; both those above him and at his own level in the organization.

23. Is able to pro-rate his energies throughout the day and keep at top efficiency all through.

24. Has demonstrated a positive interest in the coal business in the past.

25. Has demonstrated loyalty to the company in the past.

26. Knows how to get along with supervisors on his present job.

27. Possesses the ability to concentrate on a given problem and solve it effectively in a minimum of time.

28. Seeks and does additional tasks connected with his job without their being assigned directly to him.

29. Is respected by the men and women with whom he has worked.

30. Can stand criticism from superiors as well as fellow employees without being hurt or showing resentment.

31. Is usually pleasant and cheerful as a natural personality trait.

32. Willingly conforms to the rules set for employee conduct.

33. Does not become flustered or embarrassed easily.

34. Has personal long range plans for his career and has worked toward them in the past.

35. He can take criticism given to him and show profit thereby following such criticism.

36. Is willing to accept responsibility when things go wrong on the job.

37. Has pleasant personal habits and traits.

38. Is settled in his personal life away from the job and in relationships with others.

39. Is able to work with and get along with both sexes.

40. Has no fixed prejudices in his personal thinking.

41. Has learned all of the basic fundamentals of his present job and shows possibility of doing so easily on the job under consideration.

42. Has full appreciation of the principle that the firm must make a profit and how that is done.

43. Lives within his means and successfully manages his money problems on his present income.

44. Has the necessary background and education to handle the next step up the ladder.

45. Has developed good outside interests in his life to offset any job tensions which develop in his work.

46. Has demonstrated willingness to help others who lack his own capabilities.

47. Has demonstrated self confidence and assurance both on and off his present job.

48. Has refrained from obvious apple polishing; a sign of personally admitted shortcomings.

49. Has expressed confidence in the firm being a fine institution.

50. Has shown no signs of unstableness in political or economic thinking in the past.

PERSONAL DATA CHART			
NUMBER	REMARKS	REMARKS	REMARKS

NAME	AGE	SEX	RELIGION	P. SCORE

Note — The above chart may be used in analyzing each individual with respect to points set forth in the accompanying article. The number of lines used will be determined by the number of points applicable. As an example, if all 50 are used and 38 checked positive that would total 76 in the first column; 10 checked in the second column would give a score total (P plus N) of 86 since the remaining two in the third column would carry no score.

Realignment of executive responsibilities of the Davey Compressor Co. was announced today following the firm's annual meeting.



PAUL H. DAVEY, SR.

Paul H. Davey, Sr., company founder and president since 1929, was elected to the newly-created position of chairman of the board of both the Davey Compressor Co. and Davey International, Inc. The latter handles all Davey manufacturing and sales operations outside of the United States, including Canada.



PAUL H. DAVEY, JR.

Succeeding Mr. Davey, Sr. as president of Davey Compressor Co. is his son, Paul H. Davey, Jr., formerly vice president in charge of production.

New president and treasurer of Davey International, Inc., and general manager of Davey Compressor Co., is J. T. Myers, previously vice president in charge of sales.

Paul H. Davey, Sr. is credited with invention of the first air cooled portable compressor. He holds 55 patents in the compressed air and automobile fields, including the Davey heavy-duty power take-off used to power a wide variety of truck-mounted machinery. A graduate of Yale University, he is a member of S.A.E. and a director of C. L. Gougler Machine Co. and Davey Tree Expert Co.

Paul H. Davey, Jr., is also a Yale alumnus who majored in business administration and mechanical engineering. He joined Davey Compressor Co. in 1945 after service in the U. S. Army Air Force. His experience embraces virtually every department of the Davey organization.



J. T. MYERS

Mr. Myers has been affiliated with Davey since 1941. A mechanical engineering graduate of Duke University, he spent the war years as engineering officer aboard a minesweeper and later as an experimental engineer assigned to the Naval Academy, Annapolis. In his new position, he will be in charge of all Davey operations. He is president of The Joseph T. Myers Co., marine valve manufacturer, and a director of Twin Coach Company and Fageol Products Company.

Davey Compressor Co. is one of the nation's leading producers of construction machinery. Its products include portable and industrial compressors, "Auto-Air" truck-mounted compressors, power take-offs, air tools and accessories and rotary drills for the construction, quarrying, petroleum and mining industries.

The appointment of Edward J. Carroll as sales manager of the Mining Tool Division, Kennametal



EDWARD J. CARROLL

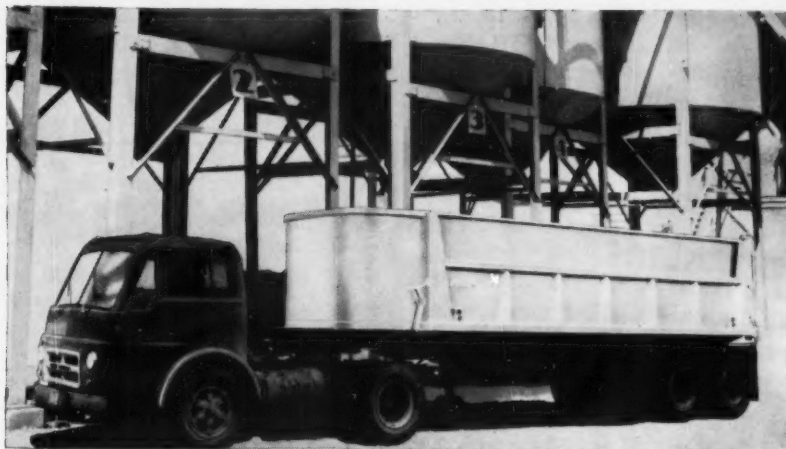
Inc., was announced by E. H. Johnson, manager of the Division. Mr. Carroll joined Kennametal a year ago as assistant sales manager. Prior to that, he worked with the Coal Division of the U. S. Steel Corporation at Uniontown, serving his last three years as assistant superintendent at Robena Mine.

In addition to a bachelor of science degree in mining engineering from the University of Notre Dame, Mr. Carroll holds a master of business administration degree from the Harvard Graduate School of Business. He has several state mining certificates, including that of first-grade mine foreman.

Mr. Carroll will have his office at the Mining Division headquarters in Bedford, Pa.

A new 30 cu. yd. tandem axle trailer dump, designed for economical bulk materials hauling in areas where highway weight limit laws set a medium gross weight limit and allow credit for only one set of tandem axles, is announced by Galion Allsteel Body Company, Galion, Ohio.

Known as Model STMF Transporter, the new trailer dump is intended for use with single rear axle tractors. It is fitted with a front-mounted Uni-scope single cylinder telescopic hoist which shifts hoist weight forward onto the tractor axles. This permits additional loading of the trailer axles and increased payloads, the manufacturers state. Matched design of Uni-scope hoist, chassis and body is said to afford unexcelled stability, both on the highway and when dumping. Model STMF can be used for direct dumping into road surfacing machines.



Galion Model STMF Transporter 26 ft. trailer dump, with Uni-scope hoist and 30 cu. yd. capacity body.

Maximum strength and minimum weight are reputed to be assured by the construction features of the new trailer dump.

The chassis, of fabricated steel

construction, is supplied with tandem Stable-ride or center pivot bridge type suspension. A full selection of axle capacities, brake types, tires and optional equipment



**You know
what YOU want
—better than we do**

If you're buying industrial or maintenance products for your company you certainly know your requirements better than we do.

There is a definite possibility that from the many manufacturers that serve us, there will be one or more that can be of advantage to you. If you will tell us, what specific requirements you have in mind, we will be very glad to be of help.

NORTHEASTERN SUPPLY CO.

321 CHERRY AVE., N. E.

CANTON, O.

ALSO BRANCH ZANESVILLE SUPPLY CO.

ZANESVILLE, O.

is offered. Understructures consists of closely spaced 4 in. channel crossmembers gusseted and welded to 6 in. I-beam longitudinals. The compact hoist well, fully welded and reinforced to distribute hoist lifting forces uniformly, is fitted with a removable access cover for hoist cylinder inspection. Ten gauge high resistant steel is used throughout the body.

Offered in body lengths from 19 to 26 ft., Model STMF Transporters have payload capacities of 10 to 40 cubic yards. Three optional Uni-scope hoists, with lifting capacities up to 30 tons, are available.

For further information, see local Galion Allsteel distributors or write direct to Galion Allsteel Body Company, Galion, Ohio. Ask for catalog LL-1234.

SALEM "HERCULES" AUGERS FOR ELECTRIC DRILLS

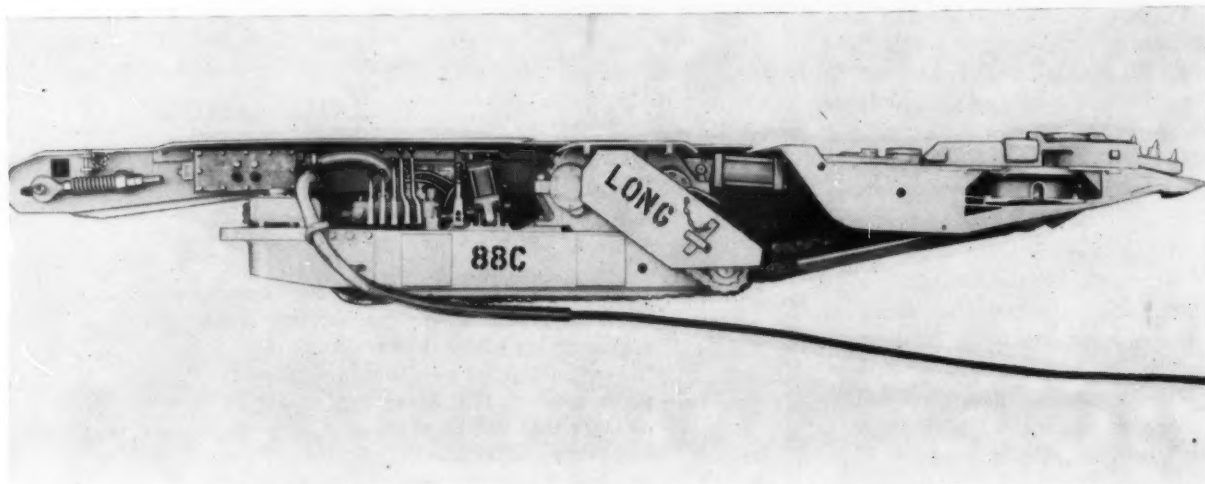
Made To Withstand High Drilling Speed Whip And Torsional Strain Of Electric Drills



Drills holes faster — Will not snap off shank or chip points — Outlasts four or five ordinary augers

THE SALEM TOOL COMPANY

SALEM, OHIO, U.S.A.



The Long Company, Oak Hill, W. Va., has introduced — and now has in production — a new loading machine that features the lowest operating height (25 $\frac{3}{4}$ "') of any high-capacity loader on the market.

The only machine designed specifically to handle the high concentrated tonnage of the LONG Piggyback Conveyor System of mining, this new Model 88-C Pigloader features unusual design

simplicity, high-capacity continuous operation, minimum maintenance, and full independent crawler control.

This straightforward design has a single 40 HP electric motor that drives all machine operations and assures unequalled digging and tramming power. All functions are conveniently controlled by a single bank of finger-tip valves.

In addition to its other advantages, the Model 88-C makes pos-

sible a substantial savings in spare parts inventory because it has fewer parts. Maintenance is also simplified and is much easier to perform. Rated capacity of this new loader is 4 to 6 tons per minute, tramming speed is 95 feet per minute, and it weighs 14,000 pounds.

For complete details on the LONG Model 88-C Pigloader, write the Long Company, P. O. Box 331, Oak Hill, W. Va.



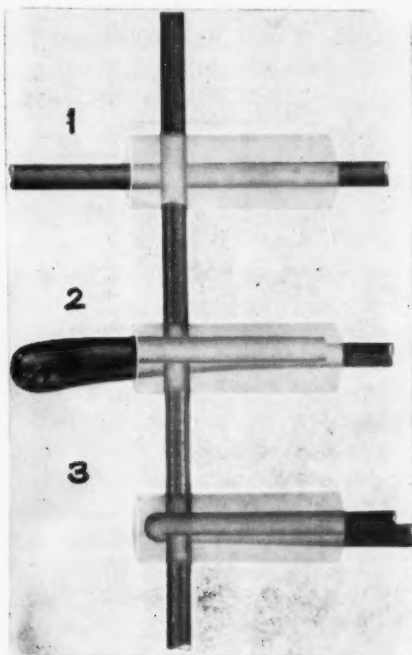
Operating at the Mays Coal Company, Limestone, Penna., is this long bar and long mast Davey M-8AL rotary blast hole drill. It can drill 24 feet ledges without changing steels.

Suitable for mounting on any standard truck, the M-8AL utilizes both compressed air and high pressure water for drilling. It has a rated capacity of 6 $\frac{1}{4}$ " holes up to 600 ft. with air and 1,500 ft. with mud. In operation, it is said to effect substantial savings in drilling costs.

Compressor for air blast drilling is a Davey 500 c.f.m. unit. High pressure water pump is heavy duty duplex type. Compressor and pump are driven by a GMC-471 engine mounted on the truck bed. A 5-speed transmission permits operation of the drill at its most efficient speed.

A plastic connector that is reputed to provide a simple but completely effective method of hooking up detonating fuse preparatory to blasting is announced by Austin Powder Company, Cleveland 13, Ohio.

When employed for joining trunk and branch lines, the new connector is said to assure a positive coupling that won't slip, loosen or lose contact in any weather or under any job condition. It also eliminates tying of knots and the resultant possibility of their becoming untied.



Detonating fuse from shot hole and trunk lines is quickly hooked up in easy 3-step operation with new Austin detonating fuse connector.

According to the manufacturer, detonating fuse is fastened in the connector in an easy 3-step operation. First, the fuse from the shot hole is threaded through the length of the connector. Then, the trunk line is pressed into the grooved slots. Finally, the branch line is passed over the trunk line, returned the length of the connector and pulled tight.

For complete details, write for bulletin LL-5588, Austin Powder Company, Cleveland 13, Ohio.



Caterpillar D9 Tractor equipped with No. 9S Bulldozer is backfilling and leveling material on land reclamation job

after stripping coal. Working southeast of Bells Landing, Pennsylvania.

SCOTTDAL MACHINE, FOUNDRY & CONSTRUCTION CO.

DEPT. CM

BOX 51

SCOTSDALE, PA.

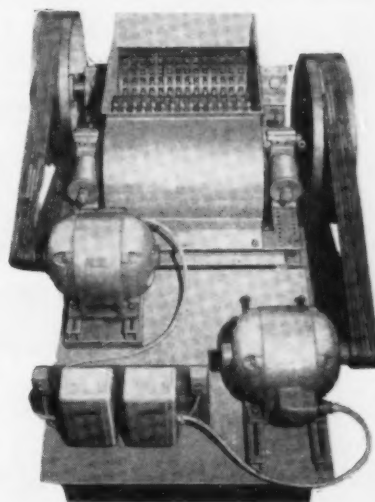
DOUBLE ROLL

COAL CRUSHER

EFFICIENT . . . produces a more uniform product!

ECONOMICAL . . . uses less power!

BOOSTS . . . sales—profits!



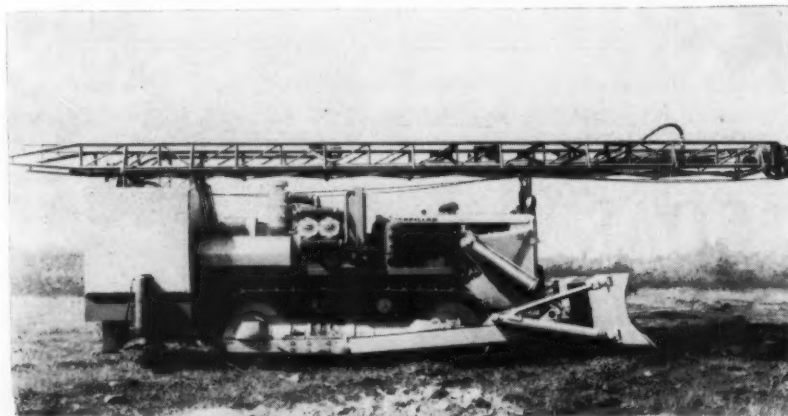
NO. 63 SPECIAL — 2 Motor Drive — Produces a Product $\frac{3}{4}$ " to 8". Equipped with Two Grooved Flywheels. (No Gears)

Efficient and practical the shredding action of the crushers' tooth studded double rolls turns out a more consistent product. Quality produced forged steel tooth gears, welded steel base, bronze bushed journal bearings, welded steel hopper and grooved flywheels.



Typical of the coal industry's trend to mechanization, is the new coal preparation plant at Moss No. 2 mine of Clinchfield Coal Company at Clinchfield, Virginia where two men have push-button control of the plant's entire operation. Once the coal enters the

plant on a belt conveyor from the mine, it is in constant motion and the plant itself designed and erected by Link-Belt Company, is a super materials handling and processing system, with the structure designed around it.



A new tractor-mounted rotary air drill is announced by Davey Compressor Co., Kent, Ohio.

Known as Model M-8TA, the unit is said to be designed for extra-heavy jobs under the most severe working conditions. It has a rated capacity of 10-inch blast holes and 35,000 lbs. pull down pressure.

The M-8TA uses compressed air for cleaning drilled holes and is claimed to be the only rotary drill that is completely successful as an air core drill. The manufacturer advises that it attains higher rotating speeds (85-155-325 r.p.m. normal drill bit speeds with 3-speed transmission) than is possible with other drills. Air pressure of

10 to 125 p.s.i. are available from a 6-cylinder Davey 500 c.f.m. capacity compressor.

Originally designed for mounting on either a new or used Caterpillar D8, the drill can be adapted to other tractors of similar size. The drill is so designed that full use of the hydraulically controlled blade is retained. Tractor engine supplies power to the entire drilling unit through a chain and gear type power transfer case.

Draw works are of the 2 drum type, permitting handling of drill pipe or Kelly and swivel in the mast. The latter is of welded tubular steel construction with angle-mounted roller bearing

crown block sheaves. Drills are normally equipped with masts of standard 36 ft. lengths to accommodate 26 ft. round, fluted 5-inch diameter Kelly bars. However, longer masts and Kelly bars are available on special order.

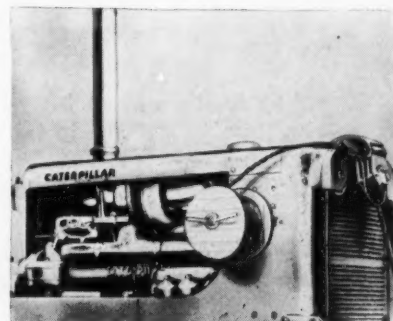
2 hydraulic cylinders raise and lower the mast. All drilling operations are controlled from a convenient panel located at the rear of the machine.

Weight of the Model M-8TA, including tractor, is approximately 58,000 lbs. It is a companion model of Davey truck-mounted rotary drills now used throughout the world. For full M-8TA details, write *Davey Compressor Co.*, Kent, Ohio. Ask for Bulletin M-733.

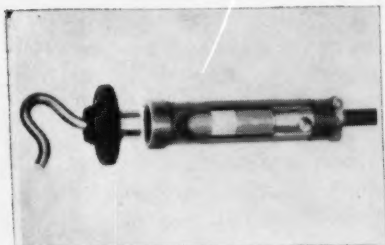
To provide a reserve supply of cable in operating the Caterpillar Nos. 9A, 9S, 8A, 8S, and 8U Bulldozers, a new cable reel has been announced by Caterpillar Tractor Co.

Designed to mount conveniently on the side of the radiator guard, the cable reel provides storage space for 300 ft. of cable. Should cable breakage occur, the reserve cable may be readily reeved through the cable control sheaves, to replace the broken portion.

Use of the cable reel eliminates the necessity of discarding the full length of cable required to operate the bulldozer.



Designed to mount conveniently on the side of the radiator guard, the new Caterpillar cable reel provides a reserve supply of 300 ft. of cable. Should cable breakage occur, the reserve cable may be readily utilized in replacing the broken portion.



A new type of fused trolley tap that provides a positive electrical connection, stops cable and insert pull outs, and is fire-resistant has just been announced by Standard Devices Company, 3231 Warrensville Center Rd., Cleveland 22, Ohio. The Standard Trolley Tap is made with a fibre glass impregnated case. Molded threads in the top of the case hold the hook insert securely. Base of the case has a clamp that acts as a strain relief, takes the pressure off the bottom of the fuse holder and prevents cable pull outs, loose connections, or overheating in the tap.

According to the manufacturer, the Standard Trolley Tap has a set screw at bottom fuse holder that exceeds maximum cable size, thus insuring positive electrical connection. The manufacturer also states that a screwdriver is the only tool needed to assemble the tap and that it takes all regular trolley tap fuses and fits all popular cable sizes.

The manufacturer points out that, since the tap eliminates cable and top insert pull outs while providing a positive electrical connection, the unit gives longer tap life at lowest possible cost.

The Standard Trolley Tap is compact and lightweight, measures 9 1/4" long and weighs only 1 lb. 7 oz. less fuse and hook.

The No. 9U Bulldozer, a new tool for the Caterpillar D9 Tractor, was introduced at the 1957 American Road Builders Association Road Show by Caterpillar Tractor Co.

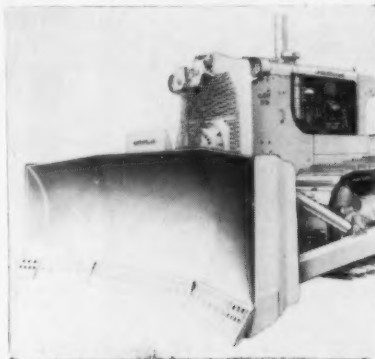
Ideally suited for such jobs as stripping, pioneering, and coal handling, the No. 9U Bulldozer's design allows it to retain large

loads on long-distance moves. The new bulldozer is designed with a straight center section and two side sections angled forward. The side sections cast material inward, and the straight center section pushes the material ahead of the blade, providing for a minimum of end spillage.

Box-type construction of the No. 9U Bulldozer gives rugged strength with minimum weight for handling tough materials.

Overall width of the new tool is 14' 10", and its weight is 12,496 pounds.

The availability of this blade fills out a complete line of Cat-built Dozers for the D9.



The No. 9U Bulldozer, the newest tool introduced for use with the Caterpillar D9 Tractor, is designed to minimize end-spillage of material. Its angled side sections cast material to the center, and make it especially suited for such jobs as stripping, pioneering, and coal handling.

• A new Model 840 four-wheel tractor and a four speed transmission option for the Model 820 tractor were announced by Ford Motor Company's Tractor and Implement Division, Birmingham, Michigan.

The new Model 840 resembles the 850 tractor but has the four speed transmission as standard equipment. This allows both the 840 and 820 to be equipped with a recently adopted over-and-under transmission as a factory-installed option. These 800 series tractors, with twelve forward and three reverse speeds. The large 172 cubic inch piston displacement en-

gine is standard equipment on these tractors. With the large engines and wide selection of speeds, these tractors are ideally suited for both farm and industrial use, the company said.

The over-and-under transmission provides two additional speed ranges for each gear ratio of the four speed transmission. Thus, with a four speed transmission, the user has a choice of twelve different forward gear speeds, including a top speed in excess of 20 MPH. This permits him to apply the correct amount of power to the job he is doing.

• Appointment of John J. Kloskoski as general service manager, Davey Compressor Co., is announced by J. T. Myers, vice president.

A member of the Davey organization since 1945, Mr. Kloskoski previously served in the product development, engineering and technical data divisions. He is an alumnus of Kent State University and was formerly affiliated with Twin Coach Company.

In his new post, he will be in charge of parts and service for Davey portable and industrial compressors, Davey "Auto-Air" truck-mounted compressors, rotary drills, air tools and accessories and other Davey products.



JOHN J. KLOSKOSKI

Good Used Coal Stripping Equipment

625 Page Diesel Drag, 150', 10 yd.
4500 Manitowoc Drag, 140', 4½ yd.
621-S Page Diesel Drag, 135', 6 yd.
7-W Monighan Elec. Drag, 120', 7 yd.
618 Page Diesel Drag, 120', 5 yd.
5-W Bucyrus Monighan Drag, 120', 5 yd.
2400 Lima Dragline, 130', 5 yd.
111-M Marion Diesel Drag, 80', 5 yd.
1055 P&H Dragline, 80', 3½ yd.
1201 Lima Dragline, 85', 3 yd.
1201 Lima Comb. Shovel and Crane.
955 P&H Dragline, 90', 2½ yd.
54-B Bucyrus Erie Drag, 85', 2½ yd.
5000 Manitowoc Drag, 85', 2½ yd.
3500 and 3000 Manitowoc Cranes.
604 and 802 Lima Cranes.

694 and 802 Lima Cranes.
5480 Marion Electric 15 yd. Shovel.
151-M Marion Elec. 5 yd. Shovel.
4500 Manitowoc 5 yd. H. L. Shovel.
1601 Lima 4 yd. Standard Shovel.
120-B Bucyrus Erie 4 yd. Electric Shovel.
1201 Lima Standard 3½ yd. Shovel.
1055 P&H 3½ yd. Standard Shovel.
111-M Marion 3 yd. H. L. Shovel.
1201 Lima 2½ yd. H. L. Shovel.
955 P&H 2½ yd. Standard Shovel.
802 Lima Comb. H. L. Shovel and Drag.
3500 Manitowoc 2 yd. H. L. Shovel.
51-B Bucyrus Erie 2 yd. Shovel.
Unit 1020 ¾ yd. Shovel.
P&H, Lorain, Bucyrus Erie Truck Cranes.
600 Reich Heavy Truck Mounted Rotary Air Drills.
58-B Joy Champion Rotary Air Drills.
McCarthy Coal Auger Drill.
Compton Coal Auger.
Mayhew Rotary Truck Mounted Air Drills.
Portadriill Truck Mounted Air Drills.
Euclid Trucks—Bottom and Rear Dumps.
Caterpillar, International and Allis-Chalmers Bulldozers.
42-T, 29-T, and 27-T Well Drills.

FRANK SWABB
Equipment Co., Inc.

313 Hazleton Nat'l Bank Bldg.

Hazleton, Pa., GLadstone 5-3658

Item: 457-P592 Caterpillar D8 Tractor with Hydraulic straight Blade. Tum starting engine; adjusted vels and tuned diesel engine; reconditioned master clutch; replaced transmission case; rebuilt steering clutches; reconditioned final drives; reconditioned track roller frames and installed good bottom rollers; sprockets, tracks and idlers are 50% good; replaced hydraulic cylinders; installed new cutting edge and corner bits on blade.

"CERTIFIED BUY"
\$8,000.00, F.O.B. Pittsburgh, Pa.

Item: 157-WV224 Caterpillar D8 Tractor with No. 25 Cable Control and No. 88 Bulldozer. Installed new final drive case, installed new bearings and seals in final drive, rebuilt transmission before trading. We installed new and rebuilt bottom rollers, one new front idler, one new sprocket, new canopy top, reringed diesel engine, valve job and re built starting engine. Unit is in very good condition. **\$15,000.00**

F.O.B. Clarksburg, W. Va.

Item: 357-WV226 International TD14 Diesel Tractor, with Dozer and Rear Cable Control Unit. Repaired oil leak in oil pan. Tuned and made minor adjustments to engine, welded bulldozer. \$3,975.00
F.O.B. Clarksburg, W. Va.

Item: 555-B157 Caterpillar D8 Tractor with Bulldozer and Single Drum Power Control Unit. Has worked approximately 30 days since new track assemblies, sprockets, and track roller assemblies were installed. Balance of tractor in good working condition.
\$4,403.00 F.O.B. Bradford, Pa.

Item: 557-P614 Caterpillar.
Model D7 Tractor with Hydraulic
Angle Blade. Installed three new
bottom rollers; adjusted operating
clutches; tuned diesel engine:
running gear in good condition.
\$4,500.00 F.O.B. Pittsburgh, Pa.

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A cutaway view of the Allis-Chalmers HD-21 diesel powered torque converter drive crawler tractor features the new four-page specification sheet (MS-1191) that is now available from the company's Construction Machinery Division, Milwaukee, Wis. Marginal notes along side the cutaway view point to many of the HD-21's mechanical, design and construction features.

2—Manitowoc Model 3500 Shovels, equipped with 45' boom, 34' stick, 2 cu. yd. bucket. Independent chain crowd power dipper trip, two operating speeds; A-Frame gantry; mounted on 16 1/4" long crawlers with 38" wide tread; 1500 Watt Kohler light plant; Caterpillar D17000 power unit; both machines in excellent operating condition and in good repair. S/N 3707 purchased in March, 1948 and S/N 3557 purchased in February, 1949. Located at McArthur. Ohio.

1—Lima Model 1002 Shovel, S/N 32569 equipped with 45' boom and 36' stick, 2 yd. bucket; powered by Cummins 300 HP engine. Purchased new December, 1955. Machine in very good condition. Located Winding Gulf, West Virginia.

For Further Information Call

WALKER MACHINERY CO.
1545 Hansford Street
Charleston, W. Va. Phone DI-30

Compton Model 42 Recovery Drill, complete with 200' augers, 42" dia. Hough Hi Lift HMD 1 3/4 yd. Good condition.

**Lorain 820 LC Shovel, Cat. Engine,
high front.**

2 Manitowoc 4500 Draglines.

**Manitowoc 3500 Dragline 3800 series.
P&H 1055 Dragline, 80' boom, Buda
motor.**

L&S Lathe 22' centers, 25' bed. Good.
International Tractor 04. Like new.
Joy 10 RU Coal Cutter on Rubber,
AC Power, Permissible, 440-220 V.
W-H 500 KW-MG Set, 250 V and 2300
synchronous Motor. Excellent.
GE 300 KW-MG Set, 500 V., 2300 AC.
Joy CD 25 Coal Drill on Rubber Per-
missibles.

**30 Ton Jeffrey Locomotive, 42" ga.
Goodman 460 Loaders. Low price.
Sullivan 7 AU Cutters. Low price.
Jeffrey 29 U Cutters. Low price.
New Parts for these machines.**

Joy 8 BU Loaders, 6 of these.
Sanford D-P Mine Cars, 42" ga., 5 ton.
Jeffrey 35 B and 35 BB Cutters.

4 Joy Shuttle Cars, type 42E18 X with Hyd. Steering — Elev. Discharge—Disc Brakes—Hyd. Steering 1952 models. Can be seen operating. Priced right.

"Caterpillar, Cat and Traxcavator are Registered Trademarks of Caterpillar Tractor Co."

T. L. SIMPSON

MACHINERY AGENT AND BROKER
 60 Woodbourne Ave. Pittsburgh 26, Pa.
 Phone LEhigh 1-2254

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water pumps
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*On roller groups only you can trade in your old roller on a new group and receive from \$4 to \$15 for each old roller.

That's right! The new Parts SWAP Plan makes many of your old worn out parts worth money at any Ohio Machinery Co. office. If the part you need is a SWAP item, you'll be able to pick up a low-cost rebuilt Cat* part or assembly right away, ready for installation, and you receive a good trade-in allowance immediately.

The list at the left shows which Caterpillar* parts are now covered in the Ohio Machinery Parts SWAP Plan. Many more will be added as more rebuilt parts become available. All SWAP parts are rebuilt and guaranteed by Ohio Machinery Co.

You save three ways: first, the parts are rebuilt by low-cost assembly line methods; second, you get a substantial trade-in; and third, you cut equipment downtime to a minimum.

See or call the Parts Manager at any one of Ohio Machinery's five locations for complete information.

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Jordan 3701

4000 LAKE PARK ROAD
YOUNGSTOWN, OHIO
Sterling 2-8181

U. S. ROUTE 250
CADIZ, OHIO
Cadiz 485

Preparing for its increased need of engineering because of complex mechanization, automation and Company growth, Island Creek today announced a streamlining of its several engineering departments.

Mr. N. T. Camicia, vice president and general manager of Operations for Island Creek Coal Company announced today that Mr. W. F. Diamond will head the consolidated engineering department as Manager of Engineering with Mr. S. M. Dameron as his assistant.



W. F. DIAMOND

been with Island Creek Coal Company for 25 years and is a registered electrical engineer.

Mr. Roscoe Garrett, who formerly headed the Construction Department, becomes the Superintendent of the Maintenance and Construction Engineering section, which is unified with the other engineering functions of the Operating Department. Mr. Garrett has been with Island Creek Coal Company for 45 years.

Mr. L. D. Ellison heads the Mining Engineering Section of the Engineering Department as Chief Mining Engineer. Mr. Ellison is a registered mining engineer,



ROScoe GARRETT



S. M. DAMERON

The formerly separate departments of Maintenance under Mr. S. M. Dameron and Construction under Mr. R. Garrett were unified by the move and integrated with the Engineering Department, which Mr. Diamond continues to head.

Mr. Diamond will serve as top engineering executive of the Operating Department of the Company, and General Manager of Operations. Mr. Diamond is a graduate of V. P. I. and W. Va. University, holding degrees in mechanical, electrical and mining engineering.

Mr. Dameron will supervise activities within the Engineering Department, coordinating its several sections with the line function of the Company. Mr. Dameron has

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who has been with Island Creek Coal Company for 20 years.

Mr. L. Y. James, Chief Design Engineer, heads the Design Section of the Engineering Department. Mr. James holds a bachelor of engineering science degree from Marshall College. He has been with Island Creek Coal Company for 15 years.

Mr. John Dunn, Chief Electrical Engineer, will head that section of the Engineering Department. A registered electrical engineer, Mr. Dunn joined Island Creek Coal Company in 1941.

Mr. Earl Boggs continues as Chief Project Engineer. He is a University of Kentucky graduate with a mechanical engineering degree and has 9 years of service with Island Creek Coal Company.

Mr. Ray Taliaferro, a V. P. I. mining engineering graduate, will continue to serve as Assistant Chief Mining Engineer.

Mr. R. D. Herron, a University of West Virginia mechanical engineering graduate, will assist the Superintendent of Maintenance and Construction Engineering.

ALLIS-CHALMERS TRACTORS



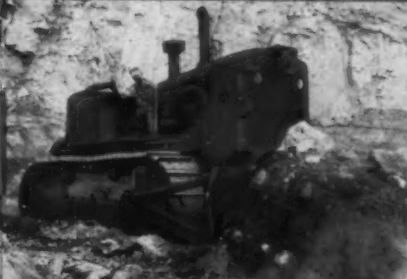
HD-21 ... PENN STATE COAL CO.
Du Bois



HD-21 ... KRISTIANSON & JOHNSON COAL CO.
Lansie



HD-21 ... NEW SHAWMUT COAL CO.
Hollywood



HD-21 ... COAL RIVER MINING CO.
Hookersville



HD-21 ...
CLARK & KRCHMAR COAL CO.
Portersville



HD-11G ...
HARRISON CONSTRUCTION CO.
Pittsburgh



HD-16 ...
JOHN H. BROOKS & SONS
Monaca



HD-6B ... JOSEPH DAVID & SON
West Middlesex

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EQUIPMENT COMPANY

6465 Hamilton Ave. • Pittsburgh 6, Pa.



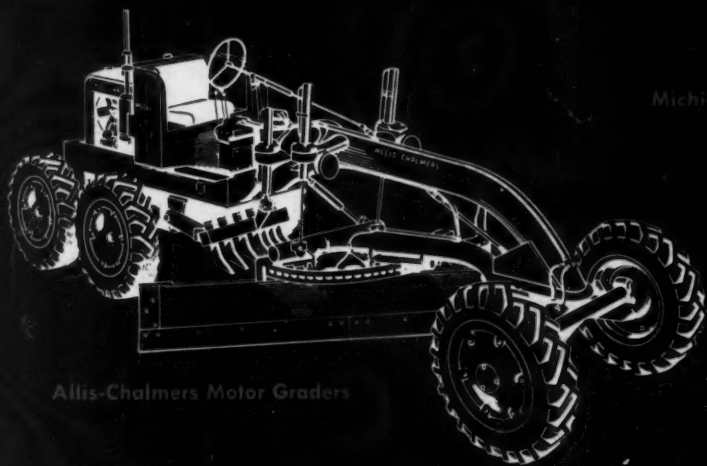
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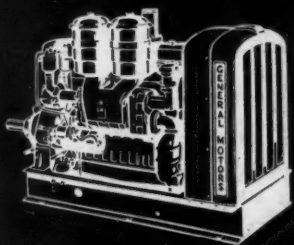
FIRST!



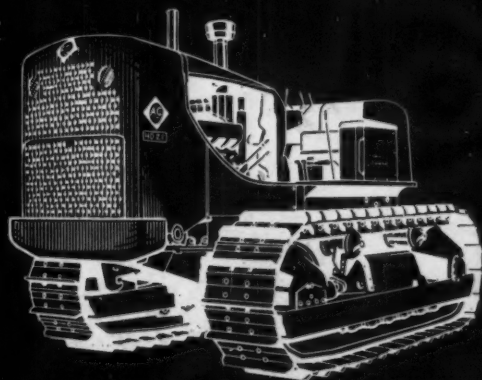
Allis-Chalmers Motor Graders



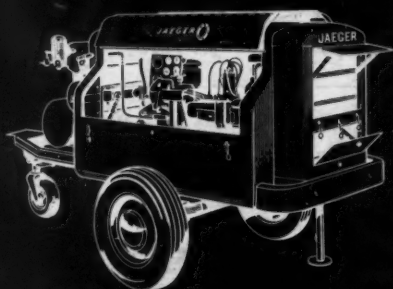
Michigan Tractor Shovels



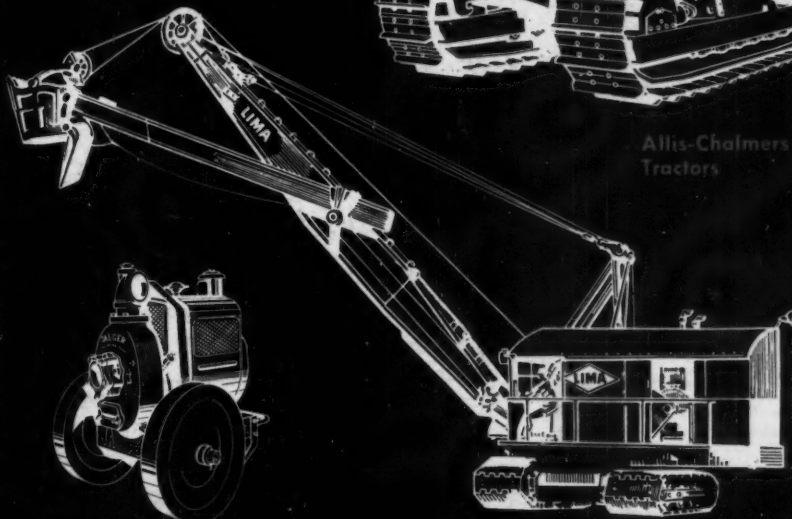
General Motors
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Compressors



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